IIYAMA

NO.

Revision

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SERVICE MANUAL

AS4636D/AS4636D BK

710-1 Kitaowaribe, Nagano-shi 381-0014 Japan

[Revision Record]

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Notice

The information in this document is subject to change without notice.

Chapter0 SAFETY PRECAUTION

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued production, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of service manual. Electrical components having such features are identified by the mark " !" on the schematics and on the parts list in service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of service manual may create shock, fire, or other hazards.
4. Use isolation transformer

   The chassis and any sub-chassis contained in some products are connected to the primary circuit of AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the primary circuit of the AC power supply is exposed.
5. Isolation check

   (Safety for electrical shock Hazard)

   After reassembling the product always perform an isolation check on the exposed metal parts of the cabinet to be sure the product is safe to operate without danger of electrical shock.

   (1) Dielectric Strength Test

   The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1,500VAC (rms), 20mA (current sensitivity) for a period of one minute.

   This method of test requires a test equipment not generally found in the

service trade.

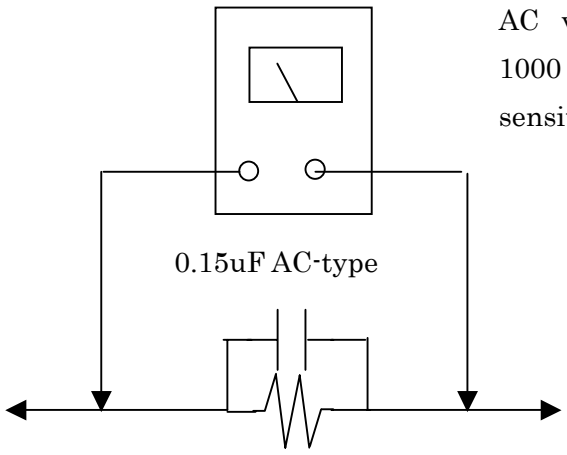
(2) Leakage current check

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "leakage Current Tester ", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe etc.). Any leakage current must not exceed 3.5mA AC (r.m.s.).

Alternate Check method

Plug the AC line cord directly into AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohm per volt or more sensitivity in the following manner. Connect a 1.500 ohm 10W resistor paralleled by a 0.15uF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe etc.).

Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 2.45V AC (r.m.s.).



Chapter 1 Replacing

If any failure happened in LCD monitor, the replacing is necessary and must be performed by qualified personnel only.

1. In the case of the light output being not enough and judging the backlight being failure, replace the backlight.
2. In the case of the picture (image) being abnormal and judging the main board being failure, replace the parts in main board. Please refer the block diagram, circuit diagram and circuit description for parts replacing.
3. In the case of no picture (image) and judging the power board being failure, replace the parts in power board. Please refer the block diagram, circuit diagram and circuit description for parts replacing.
4. In the case of no Audio output or Audio function being abnormal and judging the Audio board being failure, replace the parts in Audio board. Please refer the block diagram, circuit diagram and circuit description for parts replacing.
5. In the case of USB Hub function being abnormal and judging the USB Hub board being failure, replace the parts in USB Hub board. Please refer the block diagram, circuit diagram and circuit description for parts replacing.
6. In the case of the light output being not enough and judging the inverter board being failure, replace the inverter.

Procedure of the above replacing can refer the Chapter 5 (Exploded View)

Chapter 2　Set-up Adjustments

The following adjustments should be made when a complete realignment is required or a new PWB is installed.

<Required measuring equipment>

Signal generator (Programmable video generator) for D-sub input
Signal generator for DVI input
Signal generator or VCR/DVD player for Video input
Headphones
CD player
Audio-LR confirmation equipment
USB compliant computer

<Preparation>

1. Connect the signal cable (D-SUB and DVI) from signal generator and/ or VCR/DVD player which is for Video 1 and Video 2 checking to the monitor.
2. Connect the mini jack (stereo) cable from CD player to the Audio 1 input port of the monitor.
3. Connect the USB cable from USB compliant computer to the USB Hub upstream port of the monitor.
4. Connect the USB compliant Mouse to the USB Hub downstream port of the monitor.
5. Connect the AC cord from AC outlet to the monitor.
6. Connect the RCA pin jack cable from VCR/DVD player to left and right Audio 2 input port which matching with video input.

<Monitor function checking>

1. Based on the following timing chart to check the function of the monitor. (for D-SUB input)

mode	resolution	H-total	H sync	H-back porch	H active	H-front porch	V total	V sync	V-back porch	V active	V-front porch
1	1280X1024 @75Hz +/+	1688	144	248	1280	16	1066	3	38	1024	1
2	640X400 @56Hz -/-	848	96	48	640	64	440	8	25	400	7
3	640X480 @75Hz -/-	840	64	120	640	16	500	3	16	480	1
4	800X600 @75Hz +/+	1056	80	160	800	16	625	3	21	600	1

5	1024X768 @75Hz +/+	1312	96	176	1024	16	800	3	28	768	1
6	1024X768 @85Hz +/+	1376	96	208	1024	48	808	3	36	768	1
		dot	dot	dot	dot	dot	line	line	line	line	line

2. Based on the following timing chart to check the function of the monitor (for DVI input)

mode	resolution	H-total	H sync	H-back porch	H active	H-front porch	V total	V sync	V-back porch	V active	V-front porch
1	640X400 @56Hz -/-	848	96	48	640	64	440	8	25	400	7
2	640X480 @75Hz -/-	840	64	120	640	16	500	3	16	480	1
3	800X600 @75Hz +/+	1056	80	160	800	16	625	3	21	600	1
4	1024X768 @75Hz +/+	1312	96	176	1024	16	800	3	28	768	1
5	1024X768 @85Hz +/+	1376	96	208	1024	48	808	3	36	768	1
		dot	dot	dot	dot	dot	line	line	line	line	line

3. Although the monitor has the Auto set-up function, suggest the service personnel using the " reset" and " auto setup " function on OSD display to get the best performance.

<USB Hub function checking>

4. Move the Mouse on USB Hub downstream port and check the cursor on computer whether or not moving.
5. Change the Mouse to other downstream port and check the cursor whether or not moving.
6. Repeat the procedure 4 until all the downstream port function check finishes.

<Audio 1 function checking>

7. Adjust the Volume Control and make sure the volume varies.
8. Connect Audio-LR confirmation equipment between the monitor and CD player.
9. Turn off left switch of the Audio –LR confirmation equipment and make sure the right speaker works normally.
10. Turn off right switch of the Audio –LR confirmation equipment and make sure the left speaker works normally.
11. Turn the volume control to minimum and connect headphones to headphone connector.
12. confirm that the headphone don't make noise.
13. Turn the Volume Control from minimum to maximum and make sure the sound from the both headphones is well balanced and normal without hum

etc.

< Video 1/ Video 2 function checking >

14. Change the signal to Video 1 or Video 2 from OSD display by selecting " signal select " and proceed Video 1 and / or Video 2 function checking.

< Audio 2 function checking >

15. When the monitor is playing the Video 1 or Video 2 , the Audio 2 can be automatically working at the same time.

Chapter 3. Circuit description

3-1. Power circuit

The power source of AC90-264V is converted to DC 12V by means of PWM control IC (IC901- 3842A) in power board and the maximum power output is 12V/5A.This DC voltage supplies power to main board ,USB board, Audio board and inverter.

There are some DC to DC control IC in main board such as U11 (AIC1578),UPMOSFET1 (FDS9933A)which can produces DC 5.0V and U10(AIC1086-3.3CM/1.5A) and U12 U13,U14,U15(AIC1086-3.3CY)which can produce DC 3.3V for other parts use. There is also a DC to DC control IC (U04 LM2596-5) in USB board to supply DC 5V for the other parts use.

3-2 ADC circuit (analog to digital conversion circuit)

The main function of ADC circuit is completed by UADC1 (AD9884A-140) device.

The AD9884A is a complete 8-bit 140MSPS monolithic analog interface optimized for capturing RGB graphics signals from personal computers and workstations. Its 140MSPS encode rate capability and full –power analog bandwidth of 500MHz supports display resolutions of up to 1280x1024 (SXGA) at 75Hz with sufficient input bandwidth to accurately and digitize each pixel.

To minimize system cost and power dissipation, the AD9884A includes an internal +1.25V reference, PLL to generate a pixel clock from HSYNC, and programmable gain, offset and clamp circuits. The user provides only a 3.3V power supply, analog input, and HSYNC signals. Three –state CMOS outputs may be powered by a supply between 2.5V and 3.3V.

The AD9884A 's on-chip PLL generates a pixel clock from HSYNC input. Pixel clock output frequencies range from 20 MHz to 140 MHz. PLL clock jitter is typically

400ps P-P relative to the input reference. When the COAST signal is presented, the PLL maintains its output frequency in the absence of HSYNC. A 32-step sampling phase adjustment is provided. Data, HSYNC and Data clock output phase relationships are always maintained. The PLL can be disabled and an external clock input provided as the pixel clock.

A clamp signal is generated internally or may be provided by user through the CLAMP input pin. This device is fully programmable via a two-wire serial port.

3-3 DVI circuit (Digital Visual Interface circuit)

The main function of DVI circuit can convert serial digital signal to parallel digital signal and U19 (Sil151A) can perform this function.

The Sil 151A receiver uses Panellink Digital technology to support high resolution displays up to SXGA. The Sil 151A receiver supports up to true color panels (24 bit/pixel, 16.7M colors) in 1 or 2 pixels/clock mode. I addition, the receiver data output is time staggered to reduce ground bounce that affects EMI. Since all Panellink products are designed on scaleable CMOS architecture to support future performance requirements while maintaining the same logical interface, system designers can be assured that the interface will be fixed through a number of technology and performance generations.

3-4 Video circuit

The main function of Video circuit is performed by U2 (SAA7114H).

The SAA7114H is a video capture device for applications at the image port of VGA controllers.

The SAA7114H is a combination of a two-channel analog preprocessing circuit including source selection.anti-aliasing filter and ADC, an automatic clamp and gain control , a Clock Generation Circuit (CGC), A digital multi-standard decoder containing two-dimensional chrominance/luminance separation by an adaptive comb filter and a high performance scalar , including variable horizontal and vertical up and down scaling and a brightness , contrast and saturation control circuit.

It is a highly integrated circuit for desktop video application. The decoder is based on the principle of line –locked clock decoding and is able to decode the color of PAL, SECAM, and NTSC signal into ITU601 compatible color component values. The SAA7114H accepts as analog inputs CVBS or S-video (Y/C) from TV or VCR source, including weak and distorted signals. An expansion port (X-port) for digital video (bi-directional half duplex, D1 compatible) is also supported to connect to MPEG or video phone codec. At the so called image port (I port) the SAA7114H supports 8 or

16 bit wide output data with auxiliary reference data for interfacing to VGA controllers.

3-5 Scalar, OSD circuit

The main functions of scalar and OSD circuit are completed by ULCD1 (RTD3000) and the main features of PW164-20R are described below.

General

- Variable frame rate conversion and anti-frame tear option
- Freeze image, output “crop & pan” and image reversal
- Convert NTSC/PAL signal into flat panel display device timing and resolution
- Build-in YUV to RGB color space converter
- Embeded OSD and MUX for external OSD ; transparent mode support

Input Interface

- Support 24/48 bit pixel input up to 135MHZ
- Support TMDS receiver digital interface
- Support 16-bit YUV422/24-bit YUV444 video format input
- Interface to NTSC/PAL decoder, and vertical de-interface supported
- Capture window auto position& auto phase tracking capability

Scaling

- Fully programmable zoom ratio, up to 64 times up /down scaling
- Independent horizontal/vertical zoom
- An advanced zoom algorithm provides original quality
- Sharpness filter enhancement

Color Processor

- Digital brightness and contrast adjustments
- Gamma correction
- Dithering logic for 18-bit panel color depth enhancement

Output Interface

- Build-in display timing generator and fully programmable
- 1 and 2-pixel/clock panel support and up to 135 pixels/second
- Compliant with proposed VESA FPDI-2 standard

Memory Interface

- Programmable memory frequency and clock fine-tune capability

- Support 1M/4Mx16 SDRAM x2 and x3 configuration
- DRAM interface self-test
- Control engine for anti frame tear effect
- Data compression and de-compression for bandwidth saving

Host Interface

- Support 3/4 pins MCU serial bus interface

3-6 LVDS transmitter circuit

The main function of LVDS transmitter circuit is completed by U5 and U6 (NT7181F) device.

The NT7181F transmitter contains four 7-bit parallel-load serial-out registers, a 7X clock synthesizer, and five low-voltage differential (LVDS) line in a single integrated circuit. These functions allow 28 bits of single-ended low-voltage TTL (LVTTL) data to be synchronously transmitted over four balanced-pair conductors for receipt by a compatible receiver, such as the DS90CF384 or SN75LVDS82. The NT7181 transmitter is offered with programmable edge data strobes for convenient interface with a variety of graphic controllers.

3-7 Backlight and Inverter (Brightness) control circuit

The inverter converts DC12V to the AC power source for turning on the cold cathode tube and lighting the backlight by means of DC-AC converter

Signals controlled by the Microprocessor of UMCU1 are as follows.

a. Backlight on/off : The control pin is at pin5 of JP2.
b. Brightness control : The control pin is at pin7 of JP2 (For Hitachi panel.)
c. Brightness control : The control pin is at pin8 of JP2 (For NEC panel.)

3-8 USB Hub circuit

The USB Hub circuit board is at the stand of LCD monitor and the main function of USB Hub is completed by the U02 (KC82C160SH) device. This Hub has a upstream port and four downstreams port. The maximum power of each downstream is 5V/500mA.

3-9 Audio circuit

The Audio circuit board is also at the stand of LCD monitor and the main

function of Audio circuit is completed by the U1 (TPA0202) device which can drive 1W+1W speaker.

3-10 MCU circuit

UMCU1 (W78E62BP-40) with 64K byte ROM size is the Micro controller of monitor.

Chapter 4 Service parts list

Q'TY	REV.	REF.NO.	PART	DESCRIPTION	PART NO.	PRICE	REMARK
			ASSY-PACKING		HM4636DM12*		HITACHI
			ASSY-PACKING		HM4636DM10*		NEC
			ASSY-LCD		HM4636DM12*		HITACHI
			ASSY-LCD		HM4636DM10*		NEC
			ASSY-PWB-POWER UNIT		HE4636DBH01		*
			ASSY-KEY-SW		HE4636DNH01		*
			ASSY-PWB-MAIN		HE4636DFH21		HITACHI
			ASSY-PWB-MAIN		HE4636DFH01		NEC
			ASSY-PWB-USB		HE4636DUH01		*
			ASSY-PWB-AUDIO		HE4636DAH01		*
			ASSY-PWB-AUDIO IN		HE4636DDH01		*

* : AS4636D／AS4636D BK

ASSY-PACKING

Q'TY	REV.	REF.NO.	PART	DESCRIPTION	PART NO.	PRICE	REMARK
1			CARTON		02180300690		AS4636D
1			CARTON		02180300691		AS4636D BK
1			PACKING-BAG		02182400220		*
1			POLYFOAM	L	02181400410		*
1			POLYFOAM	R	02181400420		*
1			USER'S MANUAL + PE		02175000420		AS4636D
			USER'S MANUAL +PE		02175000421		AS4636D BK
1			RATING-PLATE		02176401490		AS4636D
1			RATING-PLATE		02176401491		AS4636D BK
1			LABEL	160x20mm	02176401500		AS4636D
2			LABEL	銅板紙 80 磅 80x55mm	851Z018A010		*
1			SERIAL-LABEL	合成紙 一般粘著	851T019A010		*
1			POWER CORD	K4A3FT3200WE 2M	37222300260		AS4636D (LNJ)
			POWER CORD	K1503FH5200WE 2M	37222300270		AS4636D (HNE)
			POWER CORD	K3603FH5200WE-D-1 2M	37222300280		AS4636D (HNB)
			POWER CORD	K0103FB1200WE 2M	37222300290		AS4636D (LNN)

			POWER CORD	K4A31T3200BE 2M	37222300300		AS4636D BK (LNJ)
			POWER CORD	K15031H5200BE 2M	37222300310		AS4636D BK (HNE)
			POWER CORD	K36031H5200BE-D-1 2M	37222300320		AS4636D BK (HNB)
			POWER CORD	K0103B1200BE LNN 2M	37222300330		AS4636D BK (LNN)
1			AUDIO CABLE	UL2547 #28*2C+S 1.6M 427C	3730400005*		AS4636D
			AUDIO CABLE	UL2547 #28*2C+S 1.6M BLK	3730400008*		AS4636D BK
1			SIGNAL CABLE	UL20276 #28 3+6C#427C 2M	3730012043*		AS4636D
			SIGNAL CABLE	UL20276 #28 3+6C BLK 2M	3730012048*		AS4636D BK
1			USB CABLE	UL2835 #28*1+#24*2C 1.6M	3730400006*		AS4636D
			USB CABLE(BLK)	UL2835 #28*1+#24*2C 1.6M	3730400009*		AS4636D BK
1			DVI DIGITAL CABLE	UL20276 #30 #427C 2M	3730400003*		AS4636D
			DVI DIGITAL CABLE	UL20276 #30 2M BLK	3730400007*		AS4636D BK
1			AV CABLE	UL20276 #28(1C+S)X2F 1.8M	37303000010		*
1			VIDEO CABLE	#28 1.8M	37303000020		*
1			PIVOT-DRIVE	CD-ROM CDR-IY151-101A	02177B00150		*
1/14			CARTON-TAPE	72mmx0.065mmx50M	830Z012A011		*

* : AS4636D／AS4636D BK

ASSY-LCD

Q'TY	REV.	REF.NO.	PART	DESCRIPTION	PART NO.	PRICE	REMARK
			FRAME-MAIN	18.1" NEC	02153400380		NEC
			FRAME-MAIN		02153400381		HITACHI
			LCD PANEL	NL128102AC28-07	33309180010		NEC
			LCD PANEL	TX46D14VC0CAA	33309180020		HITACHI
			LEAD-CONNECTOR	UL2725 #28 250mm	37420000170		NEC
			LEAD-CONNECTOR	UL2725 #28 250mm	37420000180		HITACHI
			LEAD-CONNECTOR	UL1571 #26 7P 150mm	37425700080		HITACHI
			LEAD-CONNECTOR	UL1571 #28 8P 150m	37425800090		NEC
			SCREW	SMB4x4NI	80BG4004W00		HITACHI
			SCREW	SMB4x8NI	80BG4008W00		NEC
			FRONT-CABINET	AS4636D	02130400270		AS4636D
			FRONT-CABINET	AS4636D (BLK)	02130400271		AS4636D BK
			BACK-COVER	AS4636D	02131100160		AS4636D
			BACK-COVER	94HB (BLK)	02131100161		AS4636D BK
			STAND-BASE-COVER	PA-746 94HB IY151-2080	02140100440		AS4636D
			STAND-BASE-COVER	94HB (BLK)	02140100441		AS4636D BK
			SWIVEL	PA-746 94HB IY151-2050	02140100450		AS4636D
			SWIVEL	94HB (BLK)	02140100451		AS4636D BK
			HINGE-COVER	PA-746 94HB IY151-2020	02140100460		AS4636D
			HINGE-COVER	94HB (BLK)	02140100461		AS4636D BK

			SUPPORT-BACK-COVER	PA-746 94HB IY151-2040	02140100470		AS4636D
			SUPPORT-BACK-COVER	94HB (BLK)	02140100471		AS4636D BK
			SUPPORT-FRONT-COVE	PA-746 94HB IY151-2031	02140100480		AS4636D
			SUPPORT-FRONT-COVE	94HB (BLK)	02140100481		AS4636D BK
			BUTTON-PUSH	PA-746 94HB	02140400751		AS4636D
			BUTTON-PUSH	94HB (BLK)	02140400752		AS4636D BK
			RUBBER-FOOT	3.0mmxΦ15 PORON	02140400740		*
			LED-LENS	CM-205 94HB	02140400761		*
			EARTH-CLAMP	SPIE 0.3m/m	02150300270		*
			SHIELD-COVER		02151400400		*
			BASE-FRAME	SECC t=1.0mm IY151-1030	02153400350		*
			SUPPORT-FRAME	SECC t=1.2mm IY151-1040	02153400360		*
			AUDIO-HOLDER	SECC t=0.8mm	02153400390		*
			PC-POWER	PC UL94V0 t=0.25mm	02161400210		*
			PC-POWER-TOP	PC UL94V0 t=0.25mm	02161400220		*
			GASKET	9x3.5x70mm	02162000010		*
			GASKET	9x3.5x10mm	02162000020		*
			HINGE	40-200-267 IY151-1020	02186000040		*
			SPEAKER	FG-58SB08	35522000030		*
			AC INLET／POWER SW	AT-01C-BW AS4636D	37211300030		*
			LEAD-CONNECTOR	UL1007 #26 3P 155mm	37425300360		*
			LEAD-CONNECTOR	UL1007 #26 4P 305mm	37425400150		*
			SCREW	BTV3x8MC-S	631Z121B080		*

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Q'TY	REV.	REF.NO.	PART	DESCRIPTION	PART NO.	PRICE	REMARK
			SCREW	STB4x10MC-S	80BS4010C00		*
			SCREW	4x16	80BS4016C00		*
			SCREW	SMK3x6NI	80KG3006W00		*
			SCREW	BTP4x12MC-S BLK	80PB4012B00		AS4636D BK
			SCREW	BTP4x12MC-S	80PB4012W00		*
			SCREW	STP4x6MC-S BLK	80PS4006B00		AS4636D BK
			SCREW	STP4*6MC-S	80PS4006W00		*
			SCREW	BTV4x8MC-S	80VB4008C00		*
			SCREW	BTV4x10MC-S	80VB4010C00		*
			SCREW	STV3x8MC-2	80VS3008C00		*
			MYLAR TAPE	MY9Y W=20mm L=66M	83120000100		*

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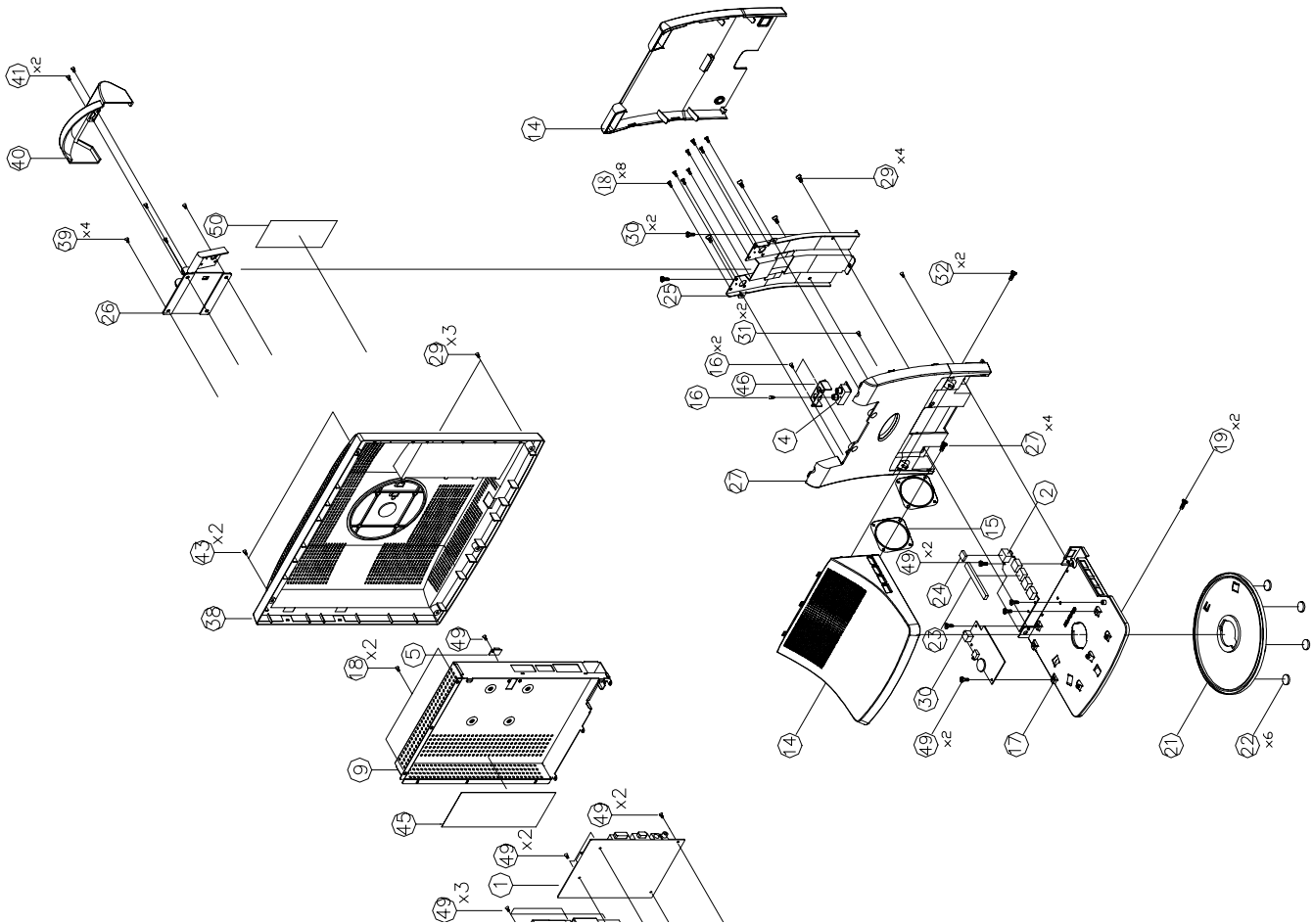
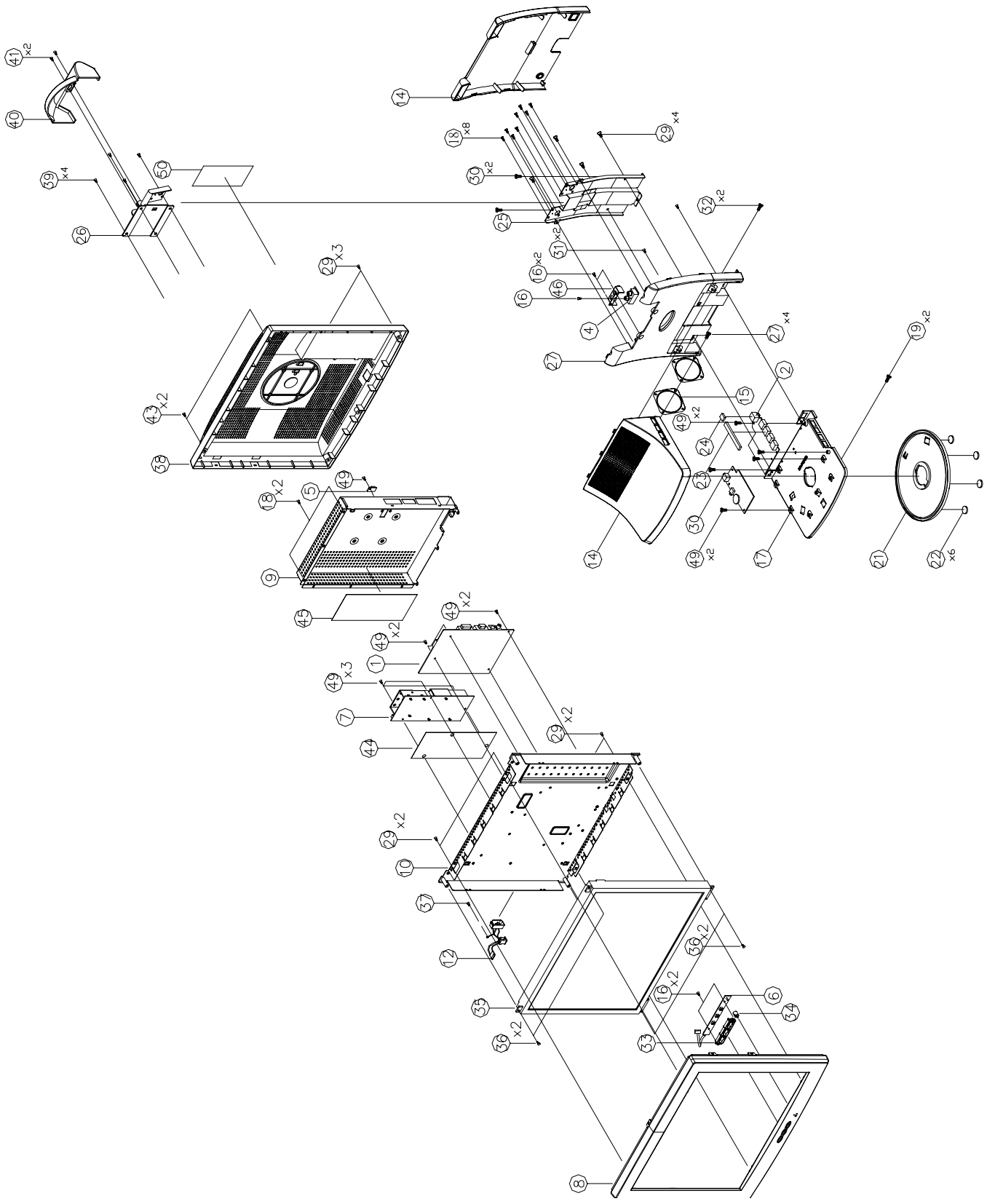
HAPTER 5 Exploded View



AS4636D (HITACHI)

R.NO	ITEM-CODE	ITEM-NAME	ITEM-SPEC	QTY
1	HE4636DFH21	MAIN BOARD		1
2	HE4636DUH01	USB BOARD		1
3	HE4636DAH01	AUDIO BOARD		1
4	HE4636DDH01	AUDIO IN BOARD		1
5	HE4636DXH01	TX BOARD		1
6	HE4636DNH01	KEY SW		1
7	HE4636DBH01	POWER UNIT		1
8	02130400270	FRONT-CABINET	AS4636D	1
9	02151400400	SHIELD-COVER	18.1"	1
10	02153400381	FRAME-MAIN	18.1"	1
11	37420000180	LEAD-CONNECTOR	UL2725 #28 250mm	1
12	37211300030	AC INLET／POWER SW	AT-01C-BW AS4636D	1
13	37425700080	LEAD-CONNECTOR	UL1571 #26 7P 150mm	1
14	02140100440	STAND-BASE-COVER	PA-746 94HB IY151-2080	1
15	35522000030	SPEAKER	FG-58SB08	1
16	631Z121B080	SCREW	BTV3x8MC-S	9
17	02153400350	BASE-FRAME	SECC t=1.0mm IY151-1030	1
18	632Z121B060	SCREW	STV3*6MC-S	15
19	80VB4008C00	SCREW	BTV4x8MC-S	2
20	37425300360	LEAD-CONNECTOR	UL1007 #26 3P 155mm	1
21	02140100450	SWIVEL	PA-746 94HB IY151-2050	1
22	02140400740	RUBBER-FOOT	3.0mmxΦ15 PORON (含貼工)	6
23	02162000010	GASKET	9x3.5x70mm	1
24	02162000020	GASKET	9x3.5x10mm	1
25	02153400361	SUPPORT-FRAME	SECC t=1.2mm IY151-1041	1
26	02186000040	HINGE	40-200-267 IY151-1020	1
27	02140100480	SUPPORT-FRONT-COVE	PA-746 94HB IY151-2031	1
28	37425400150	LEAD-CONNECTOR	UL1007 #26 4P 305mm	1
29	80PB4012W00	SCREW	BTP4x12MC-S	11
30	80BS4010C00	SCREW	STB4x10MC-S	2
31	80KG3006W00	SCREW	SMK3x6NI	2
32	80VB4010C00	SCREW	BTV4x10MC-S	2
33	02140400751	BUTTON-PUSH	PA-746 94HB	1
34	02140400761	LED-LENS	CM-205 94HB	1
35	33309180020	LCD PANEL	TX46D14VC0CAA (日立)	1
36	80BG4004W00	SCREW	SMB4x4NI	4
37	80BS4006CS0	SCREW	STB-SEMS-4x6MC-S	1
38	02131100160	BACK-COVER	AS4636D	1
39	80BS4016C00	SCREW	4x16	4
40	02140100460	HINGE-COVER	PA-746 94HB IY151-2020	1
41	80VS3008C00	SCREW	STV3x8MC-2	2
42	02140100470	SUPPORT-BACK-COVER	PA-746 94HB IY151-2040	1
43	80PS4006W00	SCREW	STP4*6MC-S	2
44	02161400210	PC-POWER	PC UL94V0 t=0.25mm	1
45	02161400220	PC-POWER-TOP	PC UL94V0 t=0.25mm	1
46	02153400390	AUDIO-HOLDER	SECC t=0.8mm	1
47	02150300270	EARTH-CLAMP	SPIE 0.3m/m	4
48	83120000100	MYLAR TAPE	MY9Y W=20mm L=66M	1/**
49	632Z421B080	SCREW	STV-SEMS-W3x8MC-S	12
50	02176401490	RATING-PLATE		1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18 ×8
29 ×4
39 ×4
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30 ×2
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25
32 ×2
31 ×2
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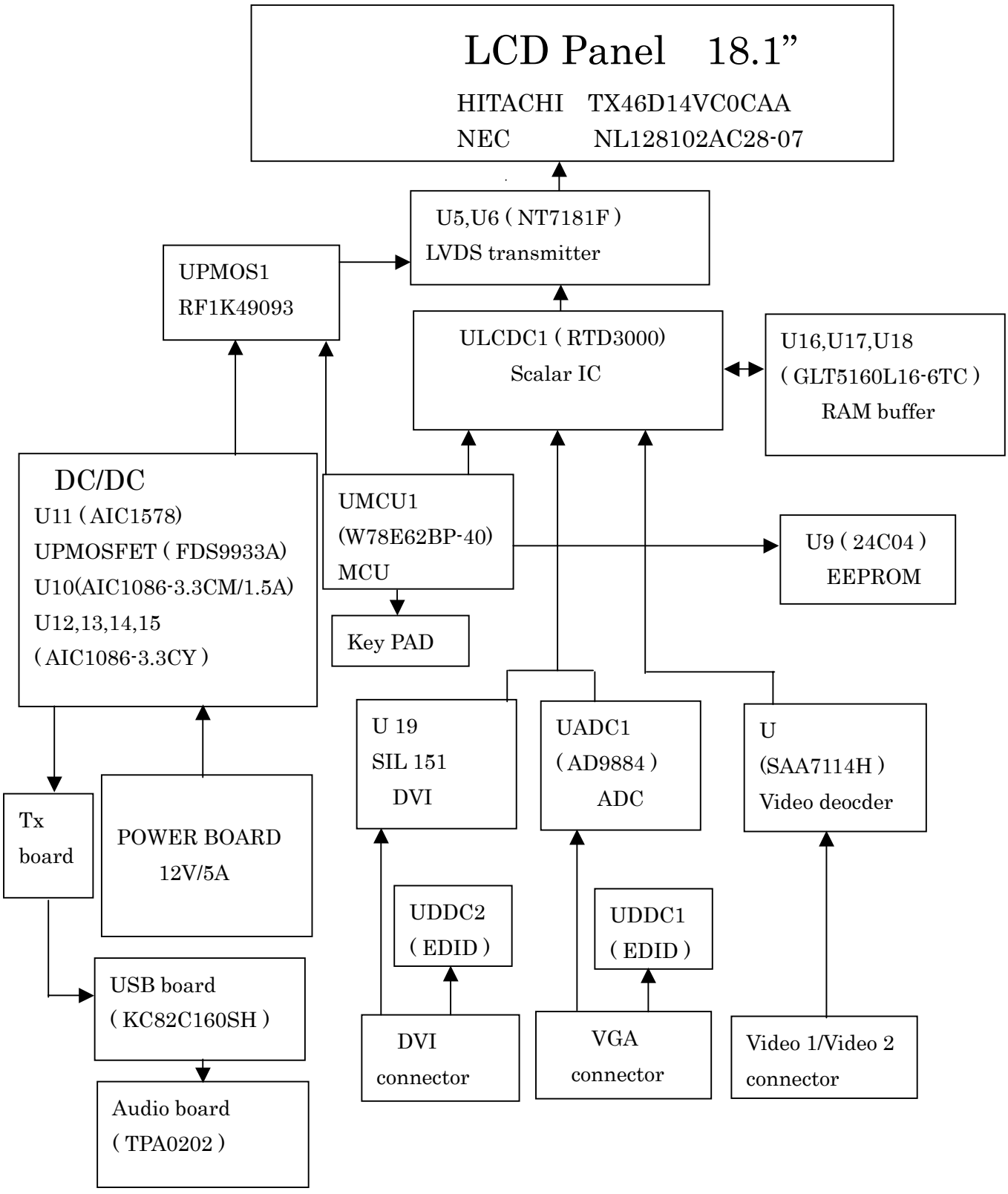
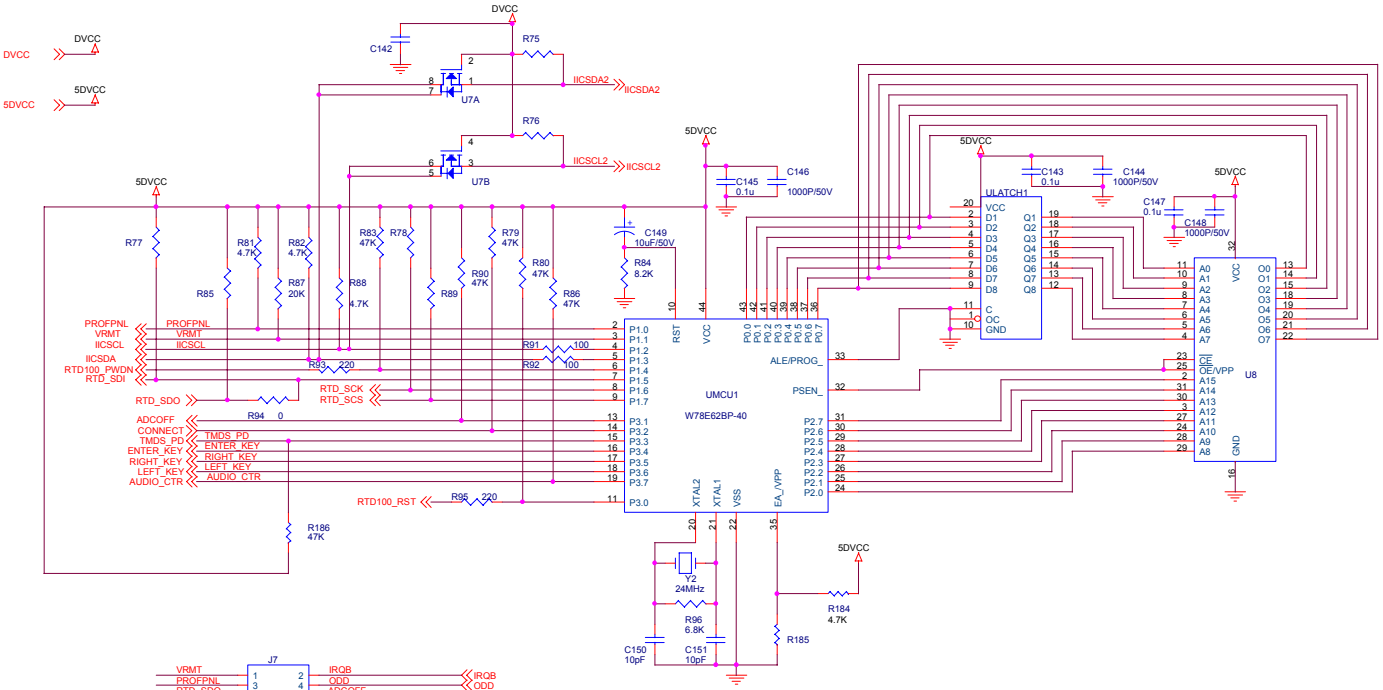
16 ×2
46
16
4
27
21 ×4
19 ×2
2
15
43 ×2
49 ×2
24
38
23
18 ×2
5
49
30
14
49 ×2
17
21
22 ×6
9
45
49 ×2
49 ×2
1
49 ×3
7
44
29 ×2
29 ×2
10
37
12
36 ×2
16 ×2
6
34
33
36 ×2
8

AS4636D (NEC)

R.NO	ITEM-CODE	ITEM-NAME	ITEM-SPEC	QTY
1	HE4636DFH01	MAIN BOARD		1
2	HE4636DUH01	USB BOARD		1
3	HE4636DAH01	AUDIO BOARD		1
4	HE4636DDH01	AUDIO IN BOARD		1
5	HE4636DXH01	TX BOARD		1
6	HE4636DNH01	KEY SW		1
7	HE4636DBH01	POWER UNIT		1
8	02130400270	FRONT-CABINET	AS4636D	1
9	02151400400	SHIELD-COVER		1
10	02153400380	FRAME-MAIN		1
11	37420000170	LEAD-CONNECTOR	UL2725 #28 250mm	1
12	37211300030	AC INLET／POWER SW	AT-01C-BW AS4636D	1
13	37425800090	LEAD-CONNECTOR	UL1571 #28 8P 150mm NEC	1
14	02140100440	STAND-BASE-COVER	PA-746 94HB IY151-2080	1
15	35522000030	SPEAKER	FG-58SB08	1
16	631Z121B080	SCREW	BTV3x8MC-S	9
17	02153400350	BASE-FRAME	SECC t=1.0mm IY151-1030	1
18	632Z121B060	SCREW	STV3*6MC-S	15
19	80VB4008C00	SCREW	BTV4x8MC-S	2
20	37425300360	LEAD-CONNECTOR	UL1007 #26 3P 155mm	1
21	02140100450	SWIVEL	PA-746 94HB IY151-2050	1
22	02140400740	RUBBER-FOOT	3.0mmxΦ15 PORON (含貼工)	6
23	02162000010	GASKET	9x3.5x70mm	1
24	02162000020	GASKET	9x3.5x10mm	1
25	02153400361	SUPPORT-FRAME	SECC t=1.2mm IY151-1041	1
26	02186000040	HINGE	40-200-267 IY151-1020	1
27	02140100480	SUPPORT-FRONT-COVE	PA-746 94HB IY151-2031	1
28	37425400150	LEAD-CONNECTOR	UL1007 #26 4P 305mm	1
29	80PB4012W00	SCREW	BTP4x12MC-S	11
30	80BS4010C00	SCREW	STB4x10MC-S	2
31	80KG3006W00	SCREW	SMK3x6NI	2
32	80VB4010C00	SCREW	BTV4x10MC-S	2
33	02140400751	BUTTON-PUSH	PA-746 94HB	1
34	02140400761	LED-LENS	CM-205 94HB	1
35	33309180010	LCD PANEL	NL128102AC28-07 (NEC)	1
36	80BG4008W00	SCREW	SMB4x8NI	4
37	80BS4006CS0	SCREW	STB-SEMS-4x6MC-S	1
38	02131100160	BACK-COVER	AS4636D	1
39	80BS4016C00	SCREW	4x16	4
40	02140100460	HINGE-COVER	PA-746 94HB IY151-2020	1
41	80VS3008C00	SCREW	STV3x8MC-2	2
42	02140100470	SUPPORT-BACK-COVER	PA-746 94HB IY151-2040	1
43	02176401490	RATING-PLATE	AS4636D	1
44	80PS4006W00	SCREW	STP4*6MC-S	2
45	02161400210	PC-POWER	PC UL94V0 t=0.25mm	1
46	02161400220	PC-POWER-TOP	PC UL94V0 t=0.25mm	1
47	02153400390	AUDIO-HOLDER	SECC t=0.8mm	1
48	02150300270	EARTH-CLAMP	SPIE 0.3m/m	4
49	632Z421B080	SCREW	STV-SEMS-W3x8MC-S	12
50	02176401490	RATING-PLATE		1
50	02176401490	RATING-PLATE		1

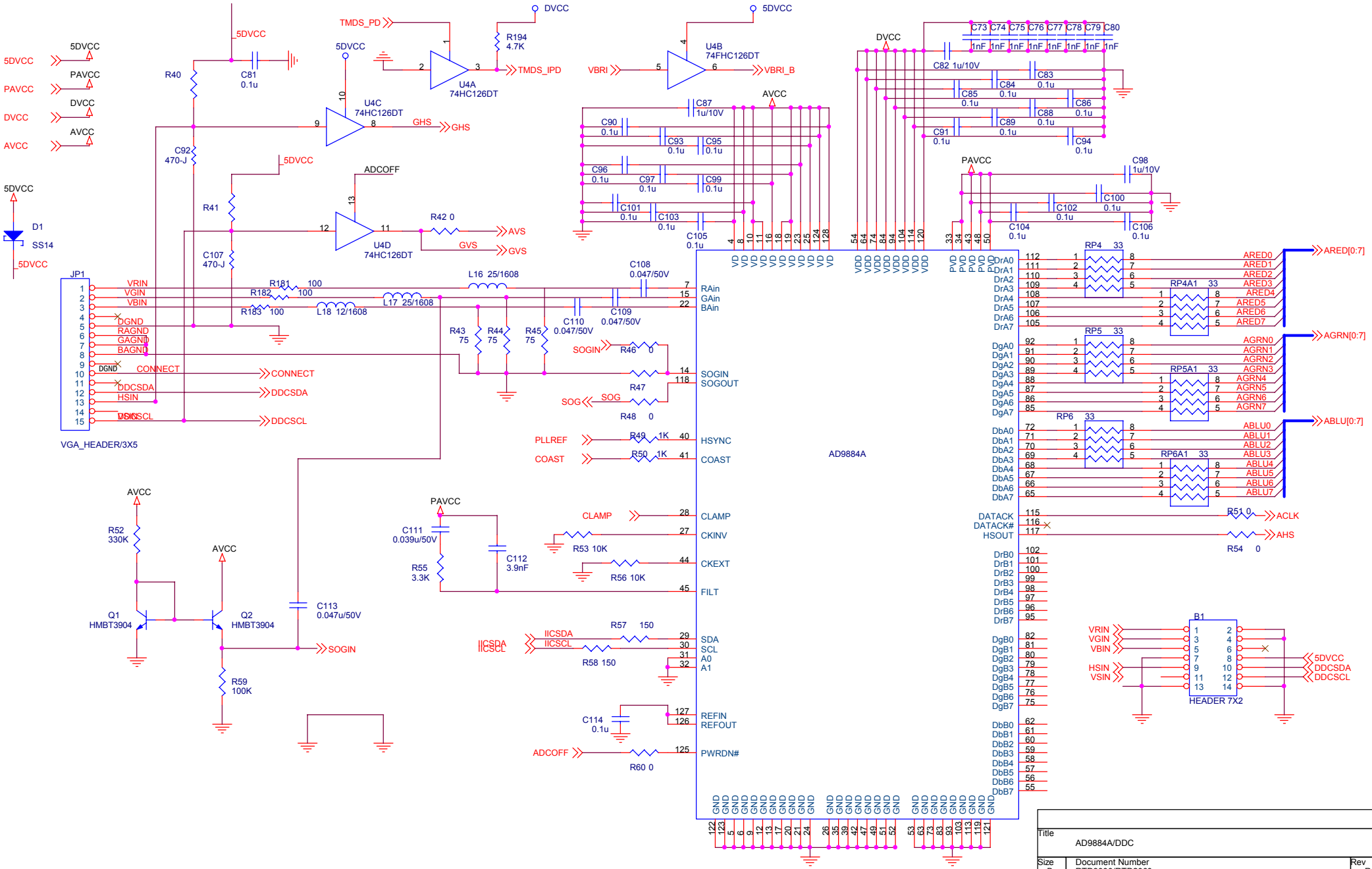
Chapter 6 Block diagram of AS4636D/As4636D BK for circuit description





Signal	PROFPNL	VRMT	ADCOFF	KEY	KEY	RTD100_RST
Func	Panel	Backlight	ADC	MENU/ENTER/RIGHT/LEFT	POWER	RTD100
0V	ON	ON	PWDN	Pressed	ON	Reset
5V	OFF	OFF	ON	OFF	OFF	Normal

Title	8051/KEY	
Size C	Document Number RTD3000	Rev A
Date: Monday, September 24, 2001	Sheet 6 of 11	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PAVCC
DVCC
AVCC
R40
C81 0.1u
TMDS_PD
R194 4.7K
TMDS_IPD
U4A 74HC126DT
U4C 74HC126DT
GHS
C92 470-J
R41
ADCOFF
U4D 74HC126DT
R42 0
AVS
GVS
C107 470-J
D1 SS14
JP1
VRIN
VGIN
VBIN
DGND
RAGND
GAGND
BAGND
CONNECT
DDCSDA
HSIN
VSIN
DDCSCL
VGA_HEADER/3X5
R181 100
R182 100
R183 100
L16 25/1608
L17 25/1608
L18 12/1608
C108 0.047/50V
C109 0.047/50V
C110 0.047/50V
R43 75
R44 75
R45 75
SOGIN
R46 0
SOG
R47
R48 0
PLLREF
R49 1K
COAST
R50 1K
U4B 74FHC126DT
VBRI
VBRI_B
C87 1u/10V
C90 0.1u
C93 0.1u
C95 0.1u
C96 0.1u
C97 0.1u
C99 0.1u
C101 0.1u
C103 0.1u
C105 0.1u
C73 1nF
C74 1nF
C75 1nF
C76 1nF
C77 1nF
C78 1nF
C79 1nF
C80 1nF
C82 1u/10V
C83 0.1u
C84 0.1u
C85 0.1u
C86 0.1u
C88 0.1u
C89 0.1u
C91 0.1u
C94 0.1u
C98 1u/10V
C100 0.1u
C102 0.1u
C104 0.1u
C106 0.1u
AD9884A
RAin
GAin
BAin
SOGIN
SOGOUT
HSYNC
COAST
CLAMP
CKINV
CKEXT
FILT
SDA
SCL
A0
A1
REFIN
REFOUT
PWRDN#
DrA0
DrA1
DrA2
DrA3
DrA4
DrA5
DrA6
DrA7
DgA0
DgA1
DgA2
DgA3
DgA4
DgA5
DgA6
DgA7
DbA0
DbA1
DbA2
DbA3
DbA4
DbA5
DbA6
DbA7
DATACK
DATACK#
HSOUT
DrB0
DrB1
DrB2
DrB3
DrB4
DrB5
DrB6
DrB7
DgB0
DgB1
DgB2
DgB3
DgB4
DgB5
DgB6
DgB7
DbB0
DbB1
DbB2
DbB3
DbB4
DbB5
DbB6
DbB7
RP4 33
RP4A1 33
RP5 33
RP5A1 33
RP6 33
RP6A1 33
ARED[0:7]
AGRN[0:7]
ABLU[0:7]
R51 0
ACLK
R54 0
AHS
R52 330K
R53 10K
R55 3.3K
R56 10K
C111 0.039u/50V
C112 3.9nF
C113 0.047u/50V
R57 150
R58 150
C114 0.1u
R60 0
Q1 HMBT3904
Q2 HMBT3904
R59 100K
B1
HEADER 7X2
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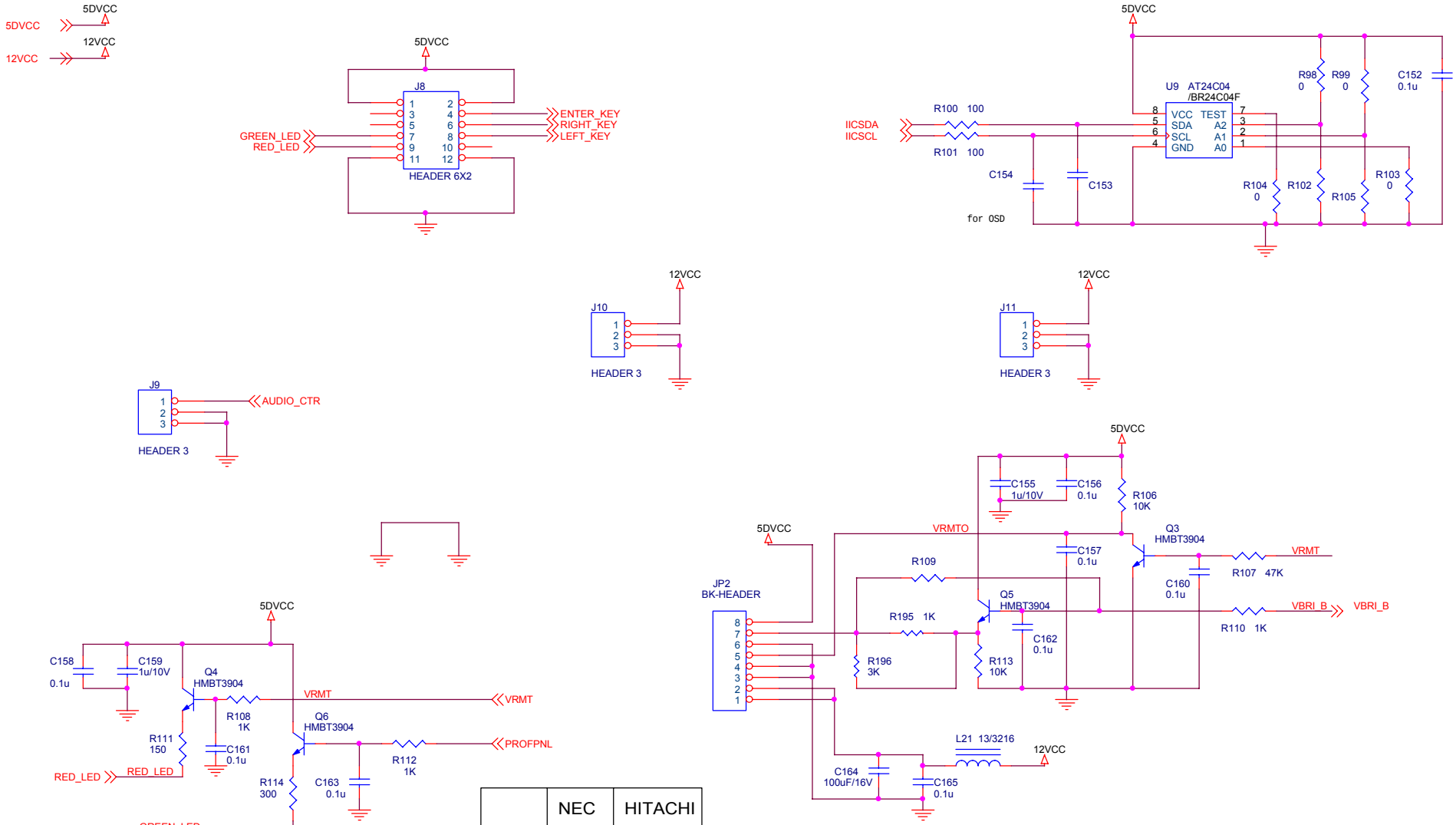
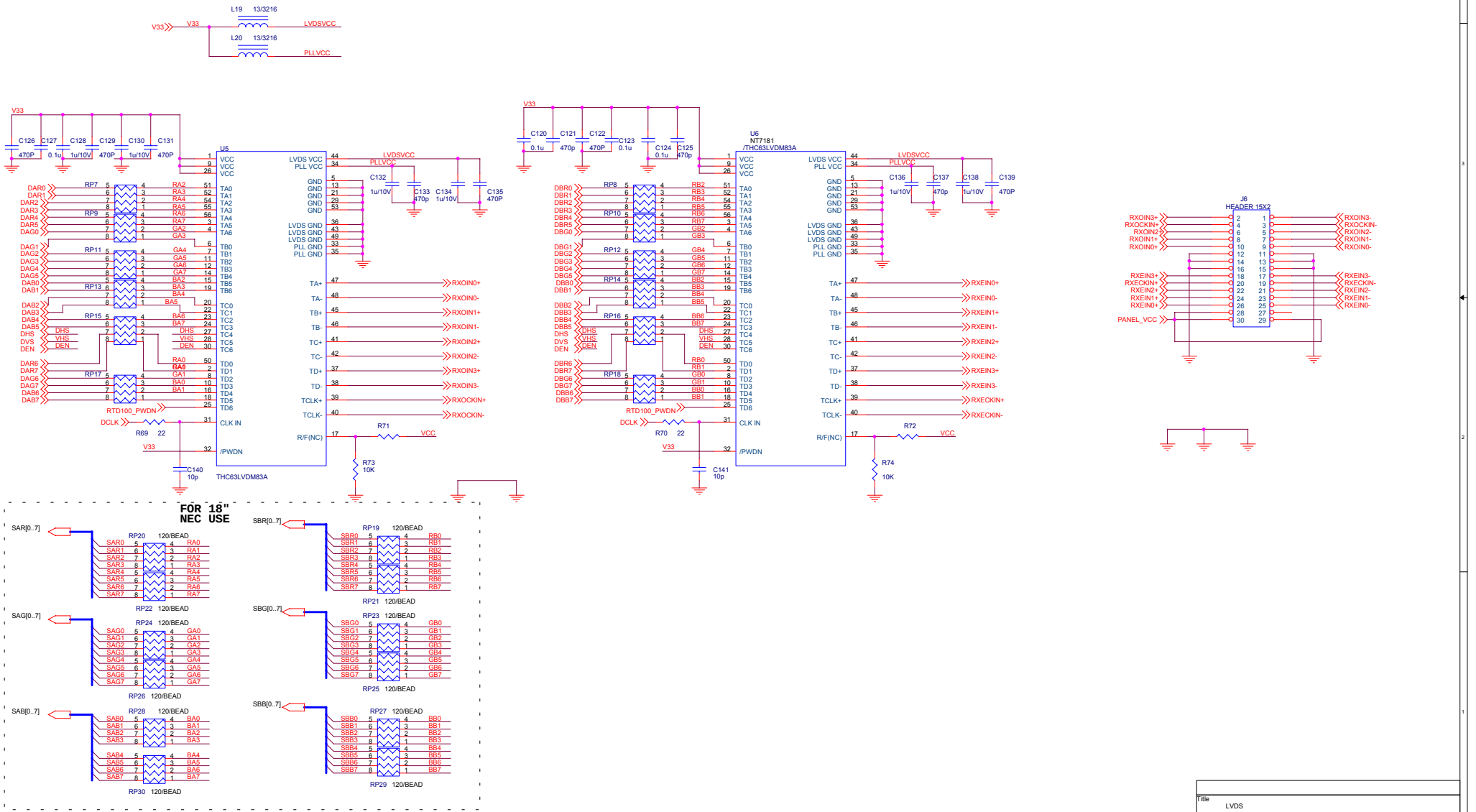
AD9884A/DDC
Size B
Document Number RTD3000/RTD2000
Rev <RevCode>
Date: Monday, September 24, 2001
Sheet 3 of 11



	NEC	HITACHI
R195	3.3K	1K
R196	1K	3K
JP2	8-PIN	7-PIN

Title	OSD/BACKLIGHT/LED	
Size B	Document Number RTD3000	Rev A
Date: Monday, September 24, 2001	Sheet 7 of 11	



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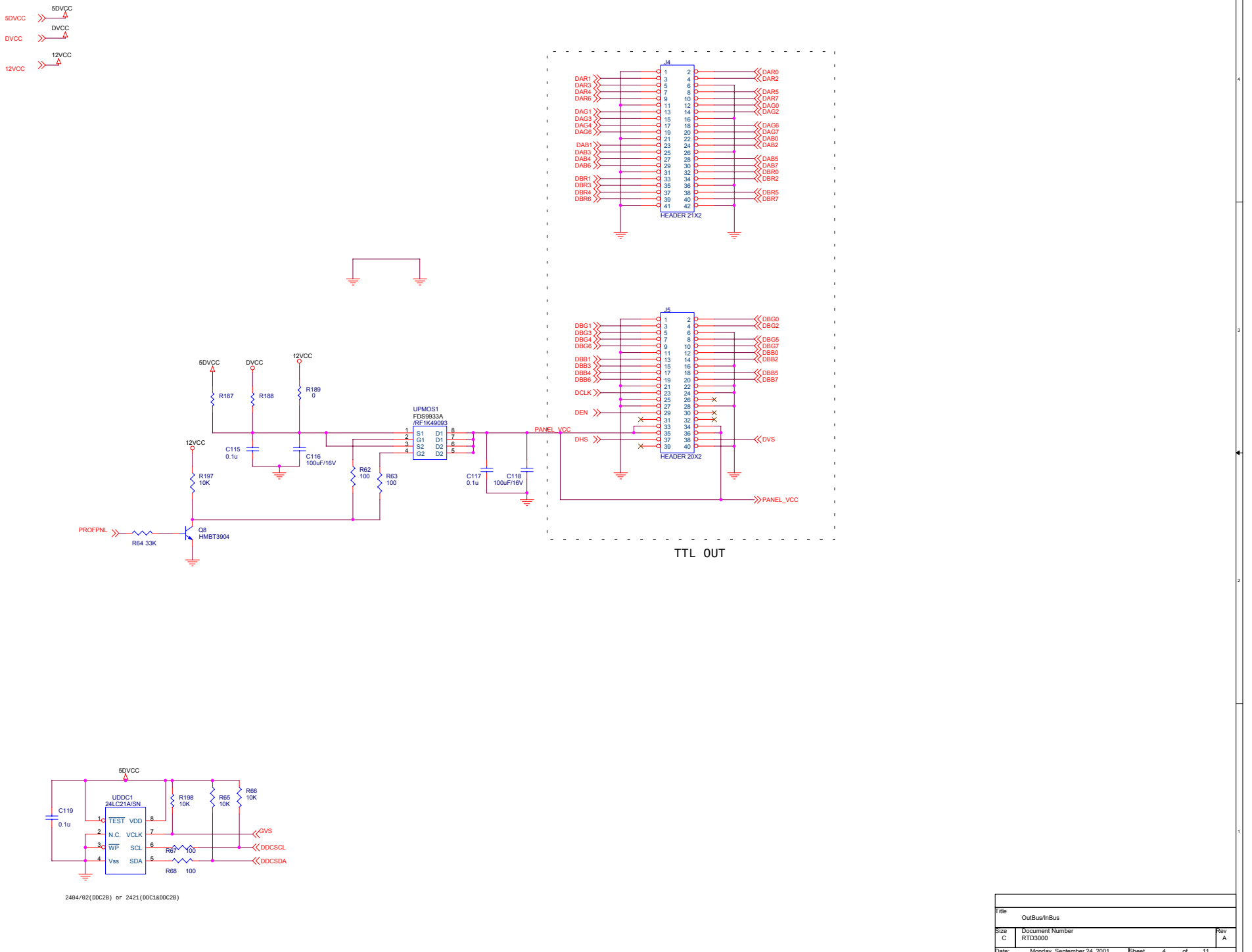
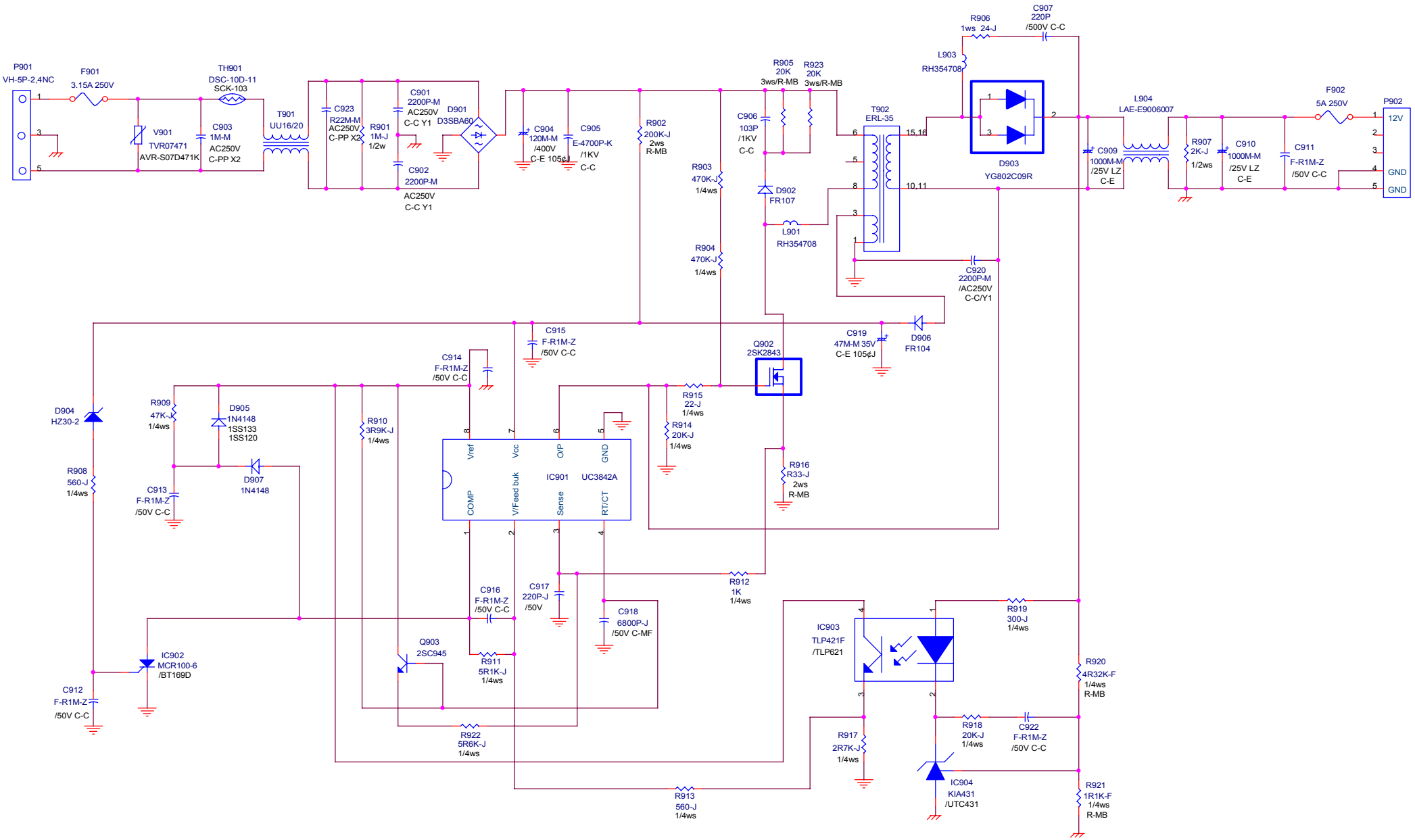
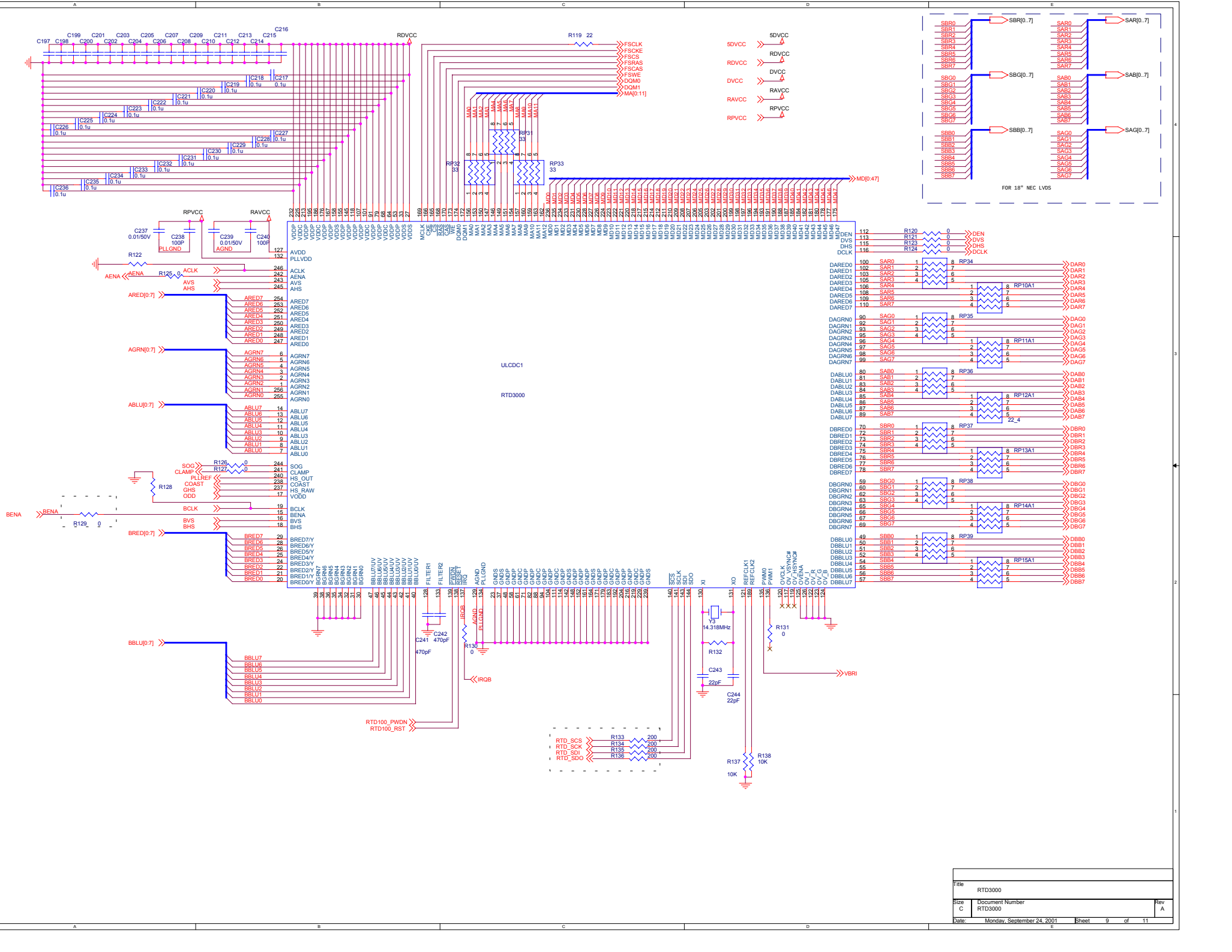


Title	OutBus/InBus	
Size C	Document Number RTD3000	Rev A
Date: Monday, September 24, 2001	Sheet 4 of 11	



Title	POWER UNIT (AS4636D)	
Size	Document Number	Rev
Date: Friday, September 28, 2001	Sheet 1 of 1	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RTD3000
RDVCC
5DVCC
DVCC
RAVCC
RPVCC
FSCLK
FSCKE
FSCS
FSRAS
FSCAS
FSWE
DQM0
DQM1
MA[0:11]
MD[0:47]
SBR[0..7]
SBG[0..7]
SBB[0..7]
SAR[0..7]
SAB[0..7]
SAG[0..7]
FOR 18" NEC LVDS
DEN
DVS
DHS
DCLK
ACLK
AENA
AVS
AHS
ARED[0:7]
AGRN[0:7]
ABLU[0:7]
BRED[0:7]
BBLU[0:7]
SOG
CLAMP
PLLREF
COAST
GHS
ODD
BCLK
BENA
BVS
BHS
IRQB
RTD100_PWDN
RTD100_RST
RTD_SCS
RTD_SCK
RTD_SDI
RTD_SDO
VBRI
14.318MHz
PLLGND
AGND
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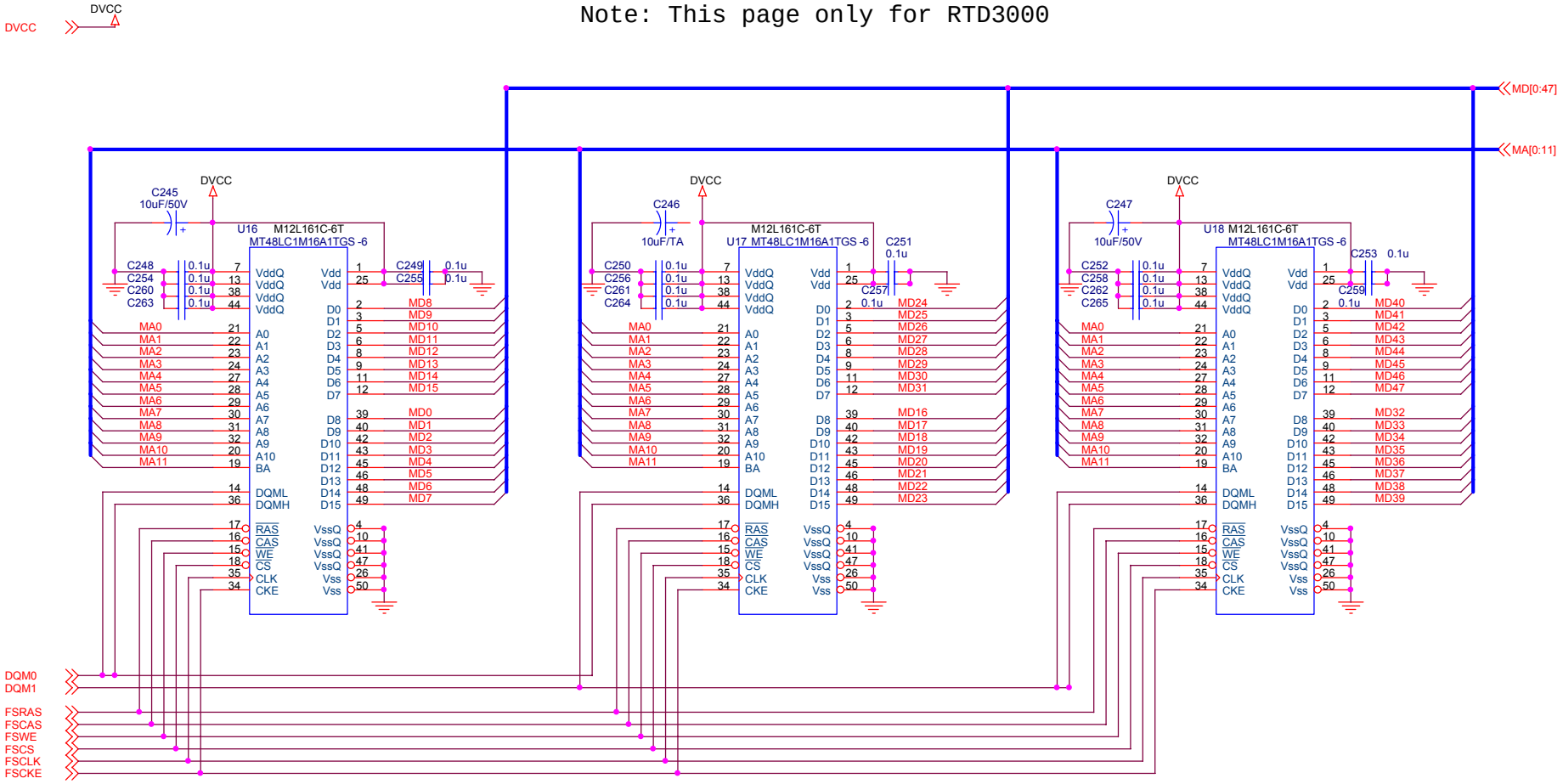
RTD3000
Size C
Document Number RTD3000
Rev A
Date: Monday, September 24, 2001
Sheet 9 of 11

Note: This page only for RTD3000



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Size B	Document Number RTD3000	Rev A
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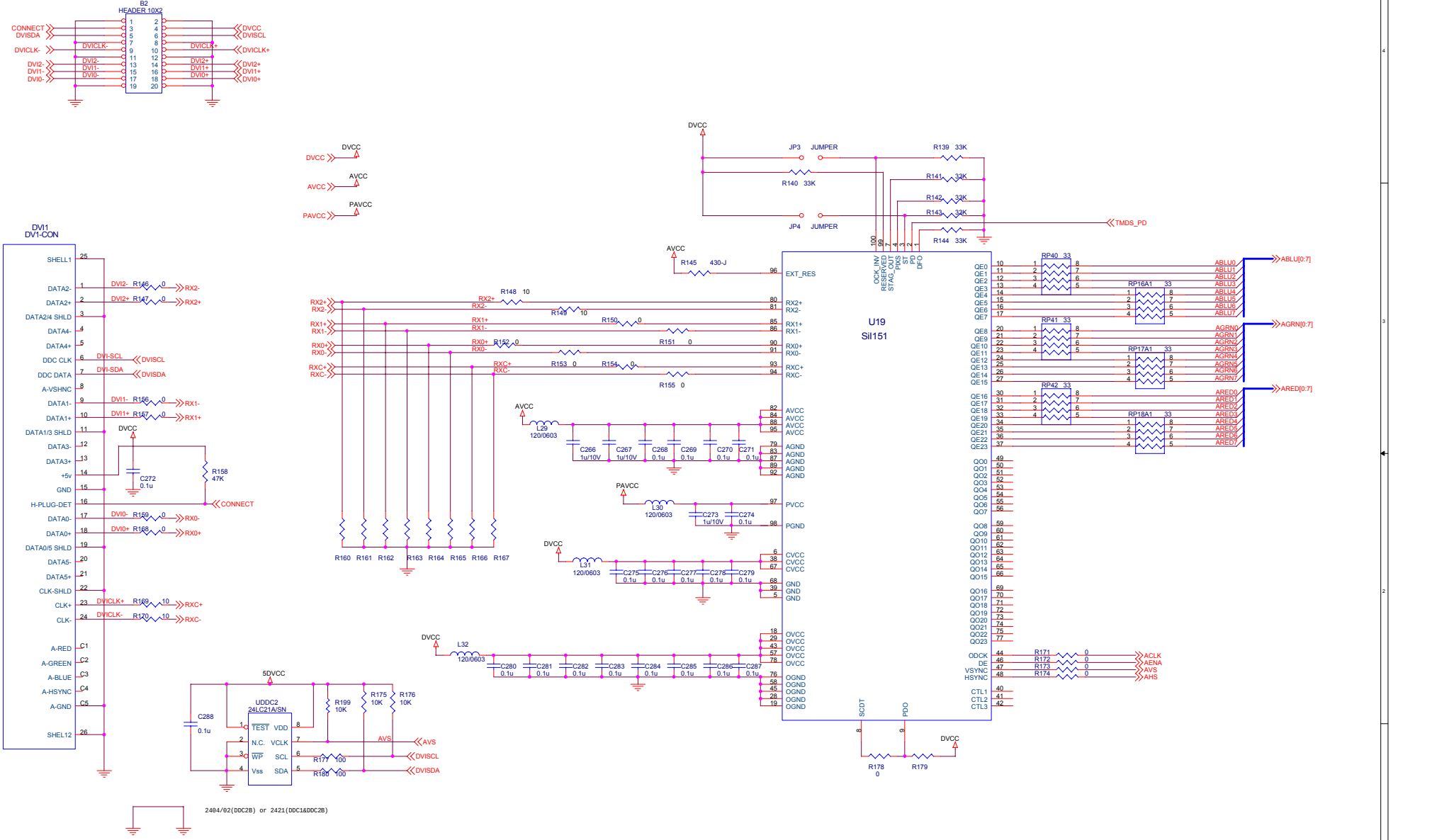
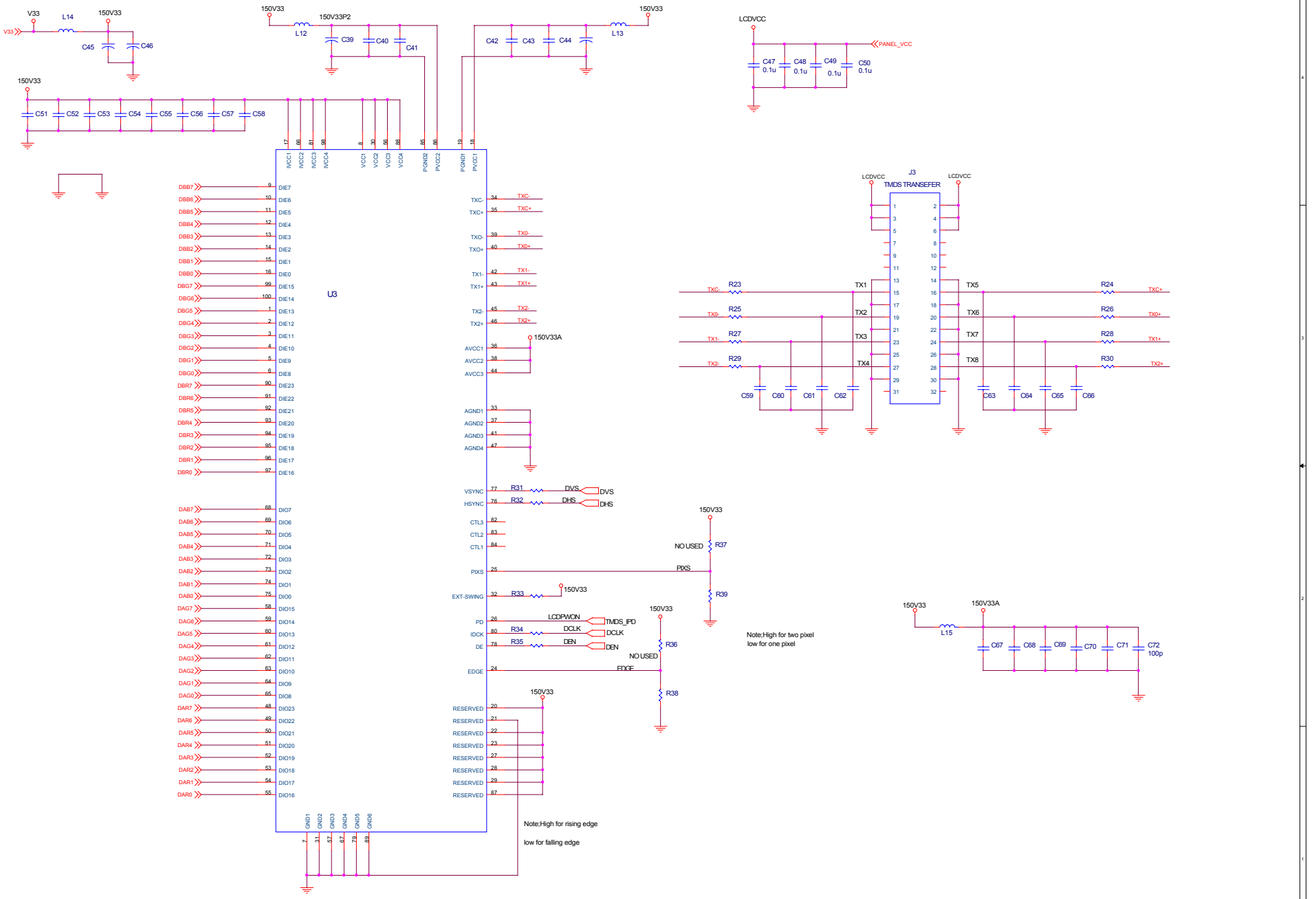


Title	Sil151/161	
Size C	Document Number RTD3000	Rev 1.0
Date: Monday, September 24, 2001	Sheet 11 of 11	



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Size	Document Number		Rev
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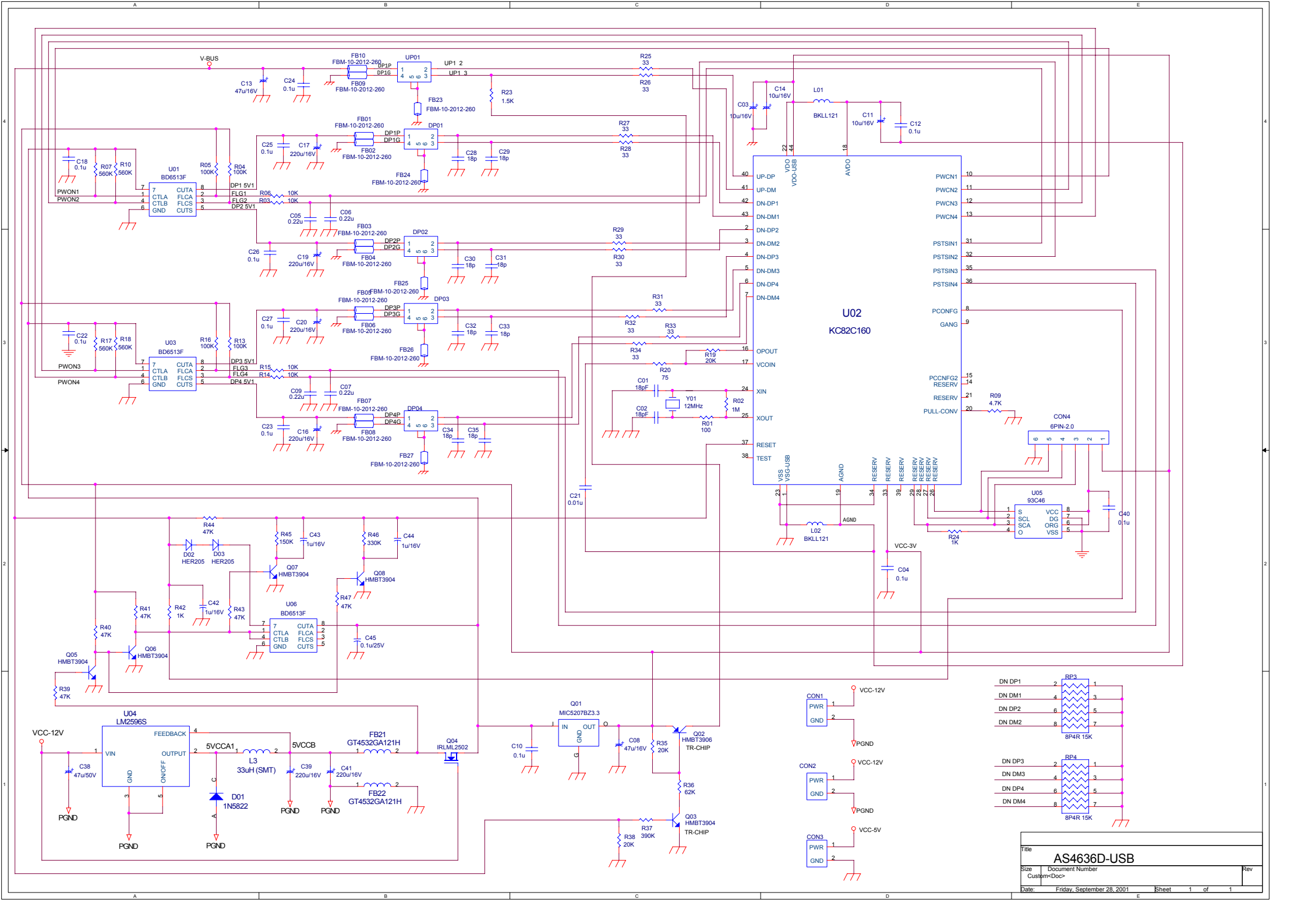
Date:	Monday, September 24, 2001	Sheet 2 of 11	


V-BUS
U02
KC82C160
U01
BD6513F
U03
BD6513F
U06
BD6513F
U04
LM2596S
Q01
MIC5207BZ3.3
U05
93C46
CON4
6PIN-2.0
CON1
CON2
CON3
RP3
RP4
8P4R 15K
Y01
12MHz
L01
BKLL121
L02
BKLL121
L3
33uH (SMT)
D01
1N5822
D02
HER205
D03
HER205
FB21
GT4532GA121H
FB22
GT4532GA121H
VCC-12V
VCC-5V
VCC-3V
PGND
AGND
PWON1
PWON2
PWON3
PWON4
DP1 5V1
DP2 5V1
DP3 5V1
DP4 5V1
5VCCA1
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AVDD
VDD
VDD-USB
VSS
VSG-USB
PCONFG
GANG
PULL-CONV
RESERV
AS4636D-USB
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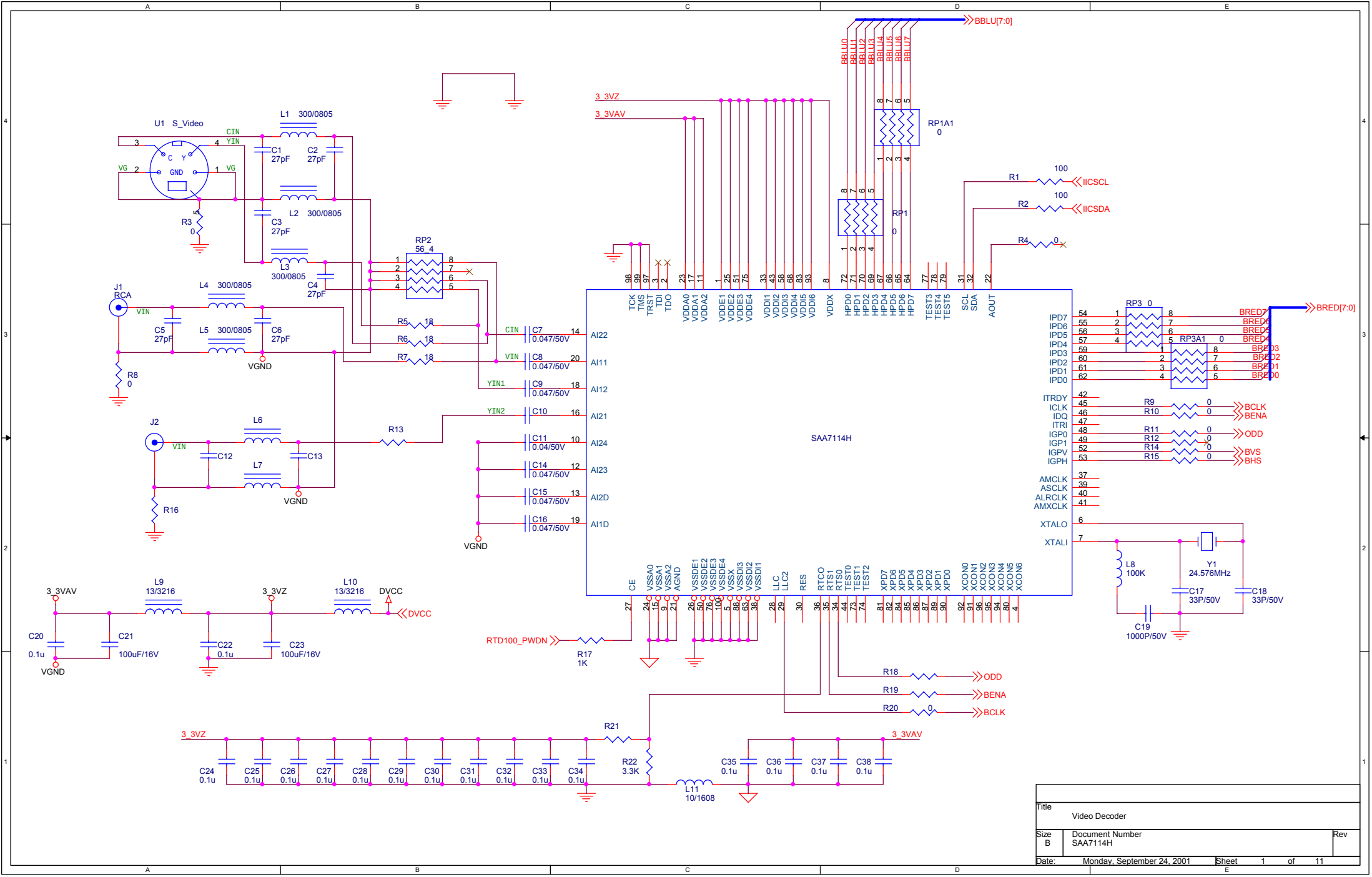
Friday, September 28, 2001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CIN
YIN
VG
GND
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L2 300/0805
L3 300/0805
L4 300/0805
L5 300/0805
L6
L7
L8 100K
L9 13/3216
L10 13/3216
L11 10/1608
C1 27pF
C2 27pF
C3 27pF
C4 27pF
C5 27pF
C6 27pF
C7 0.047/50V
C8 0.047/50V
C9 0.047/50V
C10 0.047/50V
C11 0.04/50V
C12
C13
C14 0.047/50V
C15 0.047/50V
C16 0.047/50V
C17 33P/50V
C18 33P/50V
C19 1000P/50V
C20 0.1u
C21 100uF/16V
C22 0.1u
C23 100uF/16V
C24 0.1u
C25 0.1u
C26 0.1u
C27 0.1u
C28 0.1u
C29 0.1u
C30 0.1u
C31 0.1u
C32 0.1u
C33 0.1u
C34 0.1u
C35 0.1u
C36 0.1u
C37 0.1u
C38 0.1u
R1 100
R2 100
R3 0
R4 0
R5 18
R6 18
R7 18
R8 0
R9 0
R10 0
R11 0
R12 0
R13
R14 0
R15 0
R16
R17 1K
R18
R19
R20 0
R21
R22 3.3K
RP1 0
RP1A1 0
RP2 56_4
RP3 0
RP3A1 0
J1 RCA
J2
VIN
VGND
3_3VZ
3_3VAV
DVCC
BBLU[7:0]
BRED[7:0]
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IICSDA
RTD100_PWDN
ODD
BENA
BCLK
BVS
BHS
SAA7114H
AI22
AI11
AI12
AI21
AI24
AI23
AI2D
AI1D
Y1 24.576MHz
Title
Video Decoder
Size B
Document Number SAA7114H
Rev
Date: Monday, September 24, 2001
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